

## Specific Web Building on Eucalyptus Trees in *Herennia ornatissima* (Araneae: Tetragnathidae)

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### Introduction

Web-building spiders build their webs on various kind of trees according to their web architecture. However, it has not been reported that web-building site of spiders was strongly associated with a particular species of trees. However, we found that *Herennia ornatissima* built webs specifically on the eucalyptus trees, which has not reported before. In this short report, we present the distribution pattern of web-building site of *H. ornatissima* in relation to eucalyptus trees.

### Material and Methods

*Herennia ornatissima* is distributed from southeast Asia to Papua New Guinea, and the body length is about 12–15 mm in adult female and 5–6 mm in adult male (KOH, 1989). The spider makes webs on the vertical surface of trees (ROBINSON & LUBIN, 1979) and its web architecture is adaptive to the surface of large trees (ROBINSON, 1982). The silken cup, which is made in the middle of the web and becomes larger with the growth of the spider, remains after disappearance of the spider from the web.

We counted the number of spiders and silken cups on the trees distributed along the road in FRIM (Forest Research Institute of Malaysia) in March 1994. The size of silken cup was divided into 3 categories according to the diameter; small: smaller than 0.5 cm, large: larger than 1.0 cm, middle: between 0.5 and 1.0 cm in diameter.

### Results and Discussion

Of 118 trees whose diameter of the breast height was more than 20 cm in the study site, *H. ornatissima* or its silken cup was found on 16 trees, all of which were *Eucalyptus deglupta* (Table 1). We found a total of 130 silken cups and 53 spiders in this research.

The mean numbers ( $\pm$  standard deviation) of silken cups and individual spiders per tree (on 18 eucalyptus trees) were  $5.6 \pm 8.9$  and  $2.4 \pm 3.1$  respectively. Of 130

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Table 1. The number of trees on which *Herennia ornatissima* presented along the road in FRIM. The diameter of all trees censused was more than 20 cm.

| <i>H. ornatissima</i> | <i>Eucalyptus deglupta</i> trees | other trees (non <i>Eucalyptus</i> ) |
|-----------------------|----------------------------------|--------------------------------------|
| Presence              | 16                               | 0                                    |
| Absence               | 2                                | 100                                  |

Fisher's exact probability;  $p < 0.001$

silken cups, small size was 93 (72%), middle size was 31 (24%), and large size was 6 (5%). Of 53 spiders, small size was 34 (64%), middle size was 16 (30%), and large size was 3 (6%). Although all trees checked were more than 10 m in height, 76% of silken cups and 78% of spiders were distributed below 3 m above the ground. Furthermore, we also obtained similar results between eucalyptus trees and *H. ornatissima* in the lake garden in Kuala Lumpur (MASUMOTO & OKUMA pers. obs.)

There are many works on the web site selection in web building spiders so far (e.g. ENDERS, 1973, 1977; RIECHERT & GILLESPIE, 1986). However, no report has presented the strong association between a specific species of tree and web-building spider, as presented here.

In this short report, we only clarify a strong association between *H. ornatissima* and *E. deglupta*. Much study is needed to clarify the behavioral process and ecological significance of web-building of *H. ornatissima* on *E. deglupta*.

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